

Claims

1. A resonator structure (600, 800, 810, 820) comprising two conductor layers (110, 120) and a piezoelectric layer (100) in between the conductor layers, said conductor layers and piezoelectric layer extending over a first area of the resonator structure, which first area is a piezoelectrically excitable area of the resonator structure, characterized in that
 - the resonator structure is arranged to have a zone (603, 801, 803, 804), which confines a center area (604, 802) within the first area of the resonator, and
 - the layer structure in the zone is arranged to be such that piezoelectrically excited vibrations are damped more effectively in the zone than in the center area.
2. A resonator structure (800, 810, 820) according to claim 1, characterized in that the resonator structure further comprises at least one layer (801, 803, 804) of material, which material damps vibrations effectively and which layer has an opening (802) within the first area.
- 15 3. A resonator structure according to claim 2, characterized in that the material, which dampens vibrations effectively, is polymeric material.
4. A resonator structure according to claim 3, characterized in that the material is polyimide.
- 20 5. A resonator structure according to claim 2, characterized in that the layer of material, which dampens vibrations effectively, is adjacent to one of the conductor layers.
6. A resonator structure according to claim 5, characterized in that the layer of material, which dampens vibrations effectively, is between one of the conductor layers and the piezoelectric layer.
- 25 7. A resonator structure (810) according to claim 1, characterized in that the layer of material, which dampens vibrations effectively, extends at least over the part of the piezoelectric layer, which is not within the first area.
8. A resonator structure (800) according to claim 1, characterized in that the zone (801) is within the first area.
- 30 9. A resonator structure (810) according to claim 1, characterized in that the zone (803) is at least partly outside the first area.

10. A resonator structure (820) according to claim 1, characterized in that the zone (804) substantially confines the first area.
11. A resonator structure according to claim 1, characterized in that it further comprises a second piezoelectric layer in between the conductive layers and a conductor layer in between the piezoelectric layers.
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12. A filter comprising at least one resonator structure which comprises two conductor layers (110, 120) and a piezoelectric layer (100) in between the conductor layers said conductor layers and piezoelectric layer extending over a first area of the resonator structure, which first area is a piezoelectrically excitable area of the resonator structure, characterized in that
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 - the resonator structure is arranged to have a zone (603, 801, 803), which confines a center area (604, 802) within the first area of the resonator, and
 - the layer structure in the zone is arranged to be such that piezoelectrically excited vibrations are damped more effectively in the zone than in the center area.